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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Takeshi Ono

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EXAMINER

WEINSTEIN, LEONARD J

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

11/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/687,811	Applicant(s) ONO ET AL.	
	Examiner LEONARD J. WEINSTEIN	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 14, 16, 18, 19, 21-23, 25, 26, 28 and 30-35 is/are pending in the application.
- 4a) Of the above claim(s) 17, 20, 24, 27 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13, 14, 16, 18, 19, 21-23, 25, 26, 28 and 30-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment of August 28, 2008. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.
2. The examiner acknowledges the amendments to claims 13, 14, 16, 18, 19, 21, 22, 23, 25, 26, 28, and 31-32. The examiner notes that claims 17, 20, 24, 27, and 29 have been canceled. The examiner notes that claims 33-35 have been introduced.

Claim Objections

3. Claim 30 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 30 depends from now canceled claim 29. In the response of April 9, 2008 claim 29 depended from claim 28, the examiner will consider claim 30 to depend from claim 28 for the purposes of the office action on the merits that follows.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 13-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park 6,422,833 in view of Suzuki et al. 3,664,771, further in view of Gallmeyer US 5,660,256. Park teaches all the limitations for a hermetic compressor including: **[claim 13]** a compressor element 30 elastically supported in an enclosed container 10 a cup-shaped stopper 50 fixed to an inner upper part of said enclosed container 10, a crankshaft 2 associated with said compressor element 30, with an upper end portion, section of element 2 extending into element 50 as shown in figure 2, of said crankshaft 2 extending into said cup-shaped stopper 50, and being spaced from said inner peripheral surface 51 of said cup-shaped stopper 50 with no structure existing between said upper end portion, top end of element 2, and said inner peripheral surface, element 51 of element 50, and a motor element 20 for driving said compressor element 30; **[claims 16, 19, 23, and 26]** a cup-shaped stopper 50 comprises a ring member 51; **[claims 18, 21, 25, 28, 30, and 31]** and a compressor element 30 includes a compressor chamber 31a and a piston 32 for reciprocating within said compressor chamber 31a in back and forth directions; **[claim 33]** and said inner peripheral surface, element 51 of element 50, is continuous.

Park fails to teach the following limitations that are taught by Suzuki including:

[claim 13] a cup-shaped stopper 116 having a protrusion 117 extending inwardly from an inner peripheral surface, inside of element 116, of said cup-shaped stopper 116, a crankshaft 7 associated with a compressor element 8, with an end portion of said crankshaft 7 extending into said cup-shaped stopper 116, and being spaced from said inner peripheral surface, inner surface of element 116, of said cup-shaped stopper 116 with no structure existing between said end portion, lower end of element 7 extending into element 116, and said inner peripheral surface, inner surface of element 116, such that said end portion of said crank shaft 7 arranged to contact said protrusion 117 and said inner peripheral surface, inner surface of element 116, upon oscillation of said compressor element 8 wherein a protrusion 117 extends along an axial direction of said crankshaft 7 and is formed along the inner periphery of said cup-shaped stopper 116;

[claims 14] wherein a protrusion 117 has an apex; **[claims 16, 19, 23, and 26]** a cup-shaped stopper 116 comprises a ring member, as general shape of cup stopper is a ring deformed by one edge designated by element 117 being pushed inwards to form a space 119 between itself and the edge of the adjoining opposite edge of the ring forming the cup stopper 116, and said protrusion 117 is formed by deforming an outer peripheral portion of said ring member, as formed by element 116, such that a resulting deformation of an inner peripheral portion of said ring member corresponds to said protrusion 117, as can be seen with top view of element 116 shown in figure 5; **[claims 18, 21, 25, 28, 30, and 31]** a protrusion 117 extends generally orthogonal to the back and forth directions of a piston 12 reciprocating within a compressor chamber 11 of

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compressor element 8; **[claim 32]** an inner peripheral surface, inner surface of element 116, of said cup-shaped stopper 116, comprises an innermost peripheral surface of a cup-shaped stopper, as can be seen in figures 5 and 6 where edge formed by element 117 is the edge of the inner circumference surface of the element 116; wherein said cup-shaped stopper 116 includes only one protrusion 117; **[claim 35]** and wherein said protrusion 117 is rigid and does not deform upon contact with said crankshaft 7.

Suzuki teaches that a protrusion of stopper is formed to prevent a shaft from rotating along the inner surface of the stopper when a vibration or external force is applied that alters the rotation of the compressor. It is noted by the examiner that this is the same motivation supplied by the instant disclosure on page 5 wherein it is stated that the protrusion is formed to prevent continued rotary motion of a shaft on the inner surface of a cup-shaped stopper. Thus Suzuki teaches the general concept of a protrusion formed inside of a stopper where a crankshaft for compressor extends. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the stopper of Park by deforming and inner surface to create a protrusion as taught by Suzuki in order to prevent continued rotary motion of a crankshaft along an inside of the stopper or protector (Suzuki - col. 1 ll. 34-69).

A combination of the references teaches all the limitations as discussed but fails to teach the limitations of a protrusion formed on inner surface of a stopper, shaft protector, or damper (as defined by element 10 of Gallmeyer), disposed around a rotating shaft that are taught by Gallmeyer including: **[claim 13]** a protrusion 26, formed in the shape of a curved protrusion (fig. 3A-1); **[claims 14, 15, and 22]** a curved

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protrusion 26 has an apex, innermost point of element 26 in a direction inwards of element 10, and flanks, outer edges of element 26 abutting element 10, on opposite sides of said apex, innermost point of element 26, with said flanks in a direction inwards of element 10, outer edges of element 26 abutting element 10, each having a radius of curvature such that a center of the radius of curvature is positioned outside of said stopper/damper 10, wherein said flanks, outer edges of element 26 abutting element 10, are generally symmetrical relative to one another about said apex, innermost point of the element 26 in a direction inwards of element 10; **[claim 33]** said inner peripheral surface is continuous; . Gallmeyer teaches that curved protrusion designated by element 26 aids a damper 10 in damping undesirable vibrations caused by a rotary shaft. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a hermetic compressor provided with a crankshaft extending into a stopper as taught by Park, modified to have a liner protrusion along and axial length as taught by Suzuki, further modified so that a protrusion has a convex shape with an apex disposed at an inner most point of a stopper/damper as taught by Gallmeyer in order to dampen undesirable vibrations caused by a rotary shaft (Gallmeyer - col. 2 ll. 28-32).

Response to Arguments

7. Applicant's arguments with respect to claims 13, 14, 16, 18, 19, 21, 22, 23, 25, 26, 28, and 30-32 have been considered but are moot in view of the new ground(s) of rejection.

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8. With respect to the rejection of claims 13, 14, 16, 18, 19, 21, 22, 23, 25, 26, 28, and 30-32 under 35 U.S.C. 103 (a) as being unpatentable over Park 6,422,833 in view of Suzuki et al. 3,664,771, further in view of Gallmeyer US 5,660,256, the applicant argues that Suzuki does not teach curved protrusion and Gallmeyer is non analogous art. The examiner notes that an object of Suzuki is to reduce noise and the generation of the fine particles through contact between a rotating shaft and a stopper (Suzuki - col. 1 ll. 50-69). Gallmeyer was relied upon to strictly teach a rotating shaft surrounded by a cylindrical body which has protrusion on an inner surface. This is a feature common to all three references cited with the exception of Park and the protrusion. This aspect of Gallmeyer is therefore analogous to the rotating shaft interaction with a surrounding body taught by both the Park and Suzuki references. The examiner notes that Suzuki teaches it is undesirable for a rotary shaft to frequently be in contact with the inner peripheral surface of a stopper because this could lead to generation of fine particles and then compressor failure. The protrusion taught by Gallmeyer aids in reducing a rotary shaft from contacting and cylindrical housing or body that surrounds it so as to reduce vibrations. A reduction in vibration caused by contact between the rotary shaft of Suzuki and the inner periphery of the stopper taught by Suzuki would also reduce the amount iron particles that were generated. Thus the protrusion of Gallmeyer helps to accomplish one of the objectives of Suzuki that would improve the compressor of Park.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/Leonard J Weinstein/
Examiner, Art Unit 3746